HOW TO

Identify and Control the Sugar Maple Borer

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Introduction

The sugar maple borer, *Glycobius speciosus* (Say), a long-horned wood boring beetle, is a common pest of sugar maple (the only known host) throughout the range of the tree. Although borer-caused mortality is rare, infestations lead to value loss through lumber defect caused by larval galleries, discoloration, decay, and twisted grain.

Insect Appearance

The adult borer is an attractive black and yellow beetle

Figure 1. The J-shaped pupal cell in a board sawn from a borer-infested tree. Note the decay, often associated with trees in which the larvae survive to maturity.

about 25 mm long (cover). A prominent "W" design appears on the wing covers. Although it resembles the much more common locust borer, the sugar maple borer can be distinguished by its yellow legs and two black dots near the end of the wing covers (the locust borer has reddish-brown legs and no dots). Eggs are white and about 3 mm long. Larvae are robust and dirty white and have brownish chewing mouthparts. They are nearly 50 mm long when fully grown. Pupae develop deep within the wood and are seldom seen.

Life History

The sugar maple borer has a two-year life cycle. Most eggs are laid in midsummer in roughened bark locations-in cracks, under bark scales, or around wounds. Upon hatching, the larva makes a meandering mine beneath the bark. Mining continues until early fall when it excavates a shallow cell in the sapwood. Here it spends the winter. The following spring, the larva resumes mining, etching a deep groove in the sapwood. The mine partially encircles the bole or branch as it spirals upward.

With the coming of winter, the second-year larva bores a J-shaped tunnel deep into the wood (Figure 1). In the tunnel's far end, the larva forms a chamber for overwintering. Before spring pupation, the larva chews a hole to the outside through which it will emerge as an adult in June or July.

Figure 2. (Left) Bolt showing a closed horizontal scar. (Right) The same bolt sectioned to show internal condition. In this case, the larva was unable to survive to maturity and damage was limited to staining.

Signs of Attack

The first sign of attack is a wet discoloration on the

bark. Later, coarse boring dust and frass can be found exuding from the hole in the bark, or scattered in bark crevices below the hole. Infestations occasionally cause branch death or sparse crown foliage. Old borer scars can be classed as horizontal or vertical. The former results when the larva does not complete its life cycle. Horizontal scars (Figure 2) generally indicate much less internal injury than vertical scars. Vertical scars attest that the larva survived into the second year. Bark ridges form over larval galleries, causing the bark to raise and crack (Figure 3). Sometimes the bark sloughs off, forming an open-face scar which exposes the old larval gallery in the sapwood (Figure 4).

Bole and occasional branch infestation almost always occur in the lower 30 feet of the tree (most in the lower 20 feet). Multiple attacked trees are common. These signs appear in all diameters of sugar maple, but they are most pronounced on larger trees.

Figure 3. Typical appearance of a closed horizontal scar.

Internal Defects

The gallery provides an infection court for wood inhabiting micro-organisms which interact with the tree and result in discolored wood. When wounds stay open for long periods of time, wood decay fungi may invade the tree. In reacting to close the spiral wound, the tree may develop a twisted wood grain which further compounds the defect.

Control

Several cultural means have been suggested to control sugar maple borer populations. They are based on the premise that large, low-vigor, and exposed trees are most likely to generate borers.

Figure 4. An open-faced scar. Note the exposed larval gallery in the sapwood.

(CONTROLS FOR FOREST TREES)

- In all-aged stands, selectively cut sugar maples as soon as they mature.
- In even-aged stands, harvest all large sugar maple trees.
- Remove overmature, low-vigor, and heavily infested sugar maples. Pre-June harvest of infested trees will prevent reinfestation of the residual sugar maple.
- Because grazing reduces stand vigor, exclude livestock.

- Promote stand vigor through sound sugar maple management.
- Maintain well-stocked stands.

(CONTROLS FOR SHADE TREES)

- Maintain tree vigor through watering during dry periods combined with occasional fertilization.
- In cases of early-stage attacks, insert a flexible wire through the entrance hole to pierce the larvae.
- Prune infested branches well below the attack points. Bury or burn the infested material.

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Cover Illustration

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Additional Information

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